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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,029	09/08/2004	Takeo Kitamura	2004_1303A	7688
513 7590 04/11/2007 WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			EXAMINER STIMPert, PHILIP EARL	
			ART UNIT	PAPER NUMBER
			3709	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/11/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/507,029

Applicant(s)

KITAMURA ET AL.

Examiner

Philip E. Stimpert

Art Unit

3709

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 3 and 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 09/08/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 55. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities: grammatical errors are present in many places throughout the specification, and interfere with clarity and comprehensibility. For instance, "However, the opening be also positioned higher than the oil level," (pg 8, line 17-18) is not correct English, and does not convey what the examiner believes to be the correct meaning. In a further example, "As the inner circumference of the circular columnar space is departed from the gas exhaust hole, it is

expanded, and an inner wall of columnar space is formed." (pg. 12, line 22-23) "Is departed" is not correct English, and obscures the meaning.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Appropriate correction is required.

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it should be limited to a single paragraph. Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

4. Claim 3 is objected to because of the following informalities: the limitations in the claims do not conform to mathematical conventions. First, the "specified value" is defined as "an intersection" of two particular curves. The limitation in the claim is that

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the ratio (L/R) be “more than [the] specified value.” To say that a single value is “more” than a point having two coordinates is not mathematically valid. It would be more appropriate to redefine the “specified value” as “the value of the ratio (L/R) at which an intersection occurs between...” and a description of the functions in question, or another similar modification. Second, each curve is referred to as “a function of the ratio (L/R)... and the oil circulation rate.” This implies a three-dimensional function. It would be more appropriate to reword the claim to include “an oil circulation rate curve which is a function of the ratio (L/R)” or something similar. Appropriate correction is required.

5. Claim 5 is objected to because of the following informalities: the phrase “has an opening of gas exhaust hole,” is not grammatically correct, and does not make sense. The examiner suggests changing this phrase to read “has a gas exhaust hole...” or something similar. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claim 1 contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession

of the claimed invention. Claim 1 includes a "separation chamber that is revolved by having introduced therein the fluid compressed by the compressing mechanism." The specification discloses separation chambers substantially fixed to the compressor and non-revolving. The specification does not support a revolving separation chamber.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. In claim 1, there is insufficient antecedent basis for "the centrifugal force" recited at line 5 of claim. The recitation of "this revolution" at line 5 also renders the claim indefinite since it is unclear how said "revolution" can be defined.

11. Claim 2 is indefinite in two further respects. First, the definition of the ratio (L/R) is not clear. The term L is defined as the "shortest distance L from the central axis of the columnar space to the projection line of the opening of the feed hole projected parallel to the central axis of the feed hole." The projection of the two dimensional shape of the feed hole would be three-dimensional, specifically a cylinder having the cross-section of the feed hole. The definition is unclear as to where on that cylinder the distance L is measured from, since it refers to a line. It seems implied in the specification that L is measured from the central axis of the columnar space to the nearest point on the cylindrical projection of the feed hole, however, it is also a

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reasonable interpretation from this terminology that L is measured to the central axis of the feed hole. A clearer definition of the ratio (L/R) is required.

12. Second, the term "specified value" is a relative term which renders the claim indefinite. The term "specified value" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In absence of a well defined specified value, the limitation that the ratio (L/R) be greater than the specified value, and the structure thereby described, could have almost any conceivable geometrical configuration, including some that are nonfunctional.

13. Claim 3 does not clearly define the metes and bounds of the protection sought. Given an oil separator of a slightly different geometry or size, an intersection of the said curves would occur at a different value, changing the scope of this claim. Furthermore, within any given separator geometry, different separation pipe lengths, radii and geometries are possible, each of which would result in a different curve and thus a different intersection point. Given the lack of definition within the claim of the separator pipe characteristics to be modeled, one of ordinary skill in the art would not be able to determine the metes and bounds of this claim.

14. Claim 7 includes the phrase "an opening in a direction so that the fluid flowing into the separation chamber... may not disturb the revolution of the fluid in the separation chamber." This direction is not defined by the claim, nor does the specification provide a standard for ascertaining said direction, thus one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

### ***Double Patenting***

15. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

16. Claim 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/482,170 ('170). Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of '170 includes all of the limitations of claim 1 of the instant application ('029). Claim 1 of '029 is directed towards a compressor comprising a compressing mechanism for compressing a fluid that contains lubricating oil, which is substantially matched by '170 in lines 1-2. Claim 1 of '029 is further directed towards a separation chamber into which the fluid compressed by the compressor is introduced and in which at least part of the lubricating oil contained in the fluid is separated by centrifugal force. '170 is also includes the limitation of a separation



chamber, and the further limitation that the fluid is "discharged along the outer peripheral surface of said cylindrical space," which inherently implies centrifugal separation. Further, there is nothing in claim 1 of '170, or its specification that indicates the presence of any other fluid is present in the separation chamber. Thus, claim 1 of '029 is anticipated by claim 1 of '170.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

17. Claim 1 is provisionally rejected under 35 U.S.C. 102(e) as being anticipated by copending Application No. 10/482,170 which has four common inventors with the instant application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e), if published under 35 U.S.C. 122(b) or patented. This provisional rejection under 35 U.S.C. 102(e) is based upon a presumption of future publication or patenting of the copending application. The prior application includes a compressor (see Fig. 1) including a compressing mechanism (8) for compressing a fluid that contains lubricating oil (see line 2, claim 1 of the prior application), and a separation chamber (51) in which at least a part of the lubricating oil contained in the fluid is separated by centrifugal force (see pg. 6 of prior application "has the structure of a so-called centrifugal oil separator") wherein only the introduced fluid is present in the separation chamber.

This provisional rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not

the invention "by another," or by an appropriate showing under 37 CFR 1.131. This rejection may not be overcome by the filing of a terminal disclaimer. See *In re Bartfeld*, 925 F.2d 1450, 17 USPQ2d 1885 (Fed. Cir. 1991).

Claims 1-7 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter. This is evidenced by the similar subject matter present in the instant application and copending US application 10/482,170 from a different inventive entity. Much of the claimed subject matter in the instant application is disclosed in the prior application, '170.

### ***Claim Rejections - 35 USC § 102***

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

(f) he did not himself invent the subject matter sought to be patented.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

19. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Hisanaga et al (US 6,152,713).

20. With regards to claim 1, Hisanaga et al. teach a compressing mechanism (see Fig. 2 and paragraph 3 "scroll type compressor") for compressing a fluid that contains lubricating oil (see paragraph 25) and a separation chamber (19) having introduced therein the fluid compressed by the compressing mechanism and in which at least part of the lubricating oil contained in the fluid is separated by the centrifugal force (see Fig. 15 and paragraph 10) produced by this revolution, substantially wherein only the introduced fluid is present in the separation chamber.

21. With regards to claim 2, In Fig. 15, Hisanaga et al. further teach a columnar space (19) for revolving the introduced fluid, and a feed hole (122) for introducing the fluid compressed by the compressing mechanism into the separation chamber, and the ratio ( $L/R$ ) of shortest distance  $L$  from the central axis of the columnar space (19) to the projection line of the opening of the feed hole (122) projected parallel to the central axis of the feed hole (122) and the distance  $R$  from the central axis of the columnar space (19) to the inner peripheral wall of the columnar space is more than a specified value. In this case, it is clear that the ratio ( $L/R$ ) is defined for this invention, and as such is more than any value less than the value it has.

22. With regards to claim 3, in Fig. 15, Hisanaga et al. discloses a separation chamber whose feed hole has ratio ( $L/R$ ) greater than the value at which an intersection

occurs between curves expressed as functions of the ratio in the cases of having and not having a separation pipe and the oil circulation rate.

23. With regards to claim 4, Hisanaga et al. teach a separation chamber (19) having a columnar space (19) for revolving the introduced fluid and a gas exhaust hole (104) for exhausting the introduced fluid, and the opening at the separation chamber side of the gas exhaust hole (104) is coupled to the outer circumference at one end of the columnar space through a reducing portion (124). The reducing portion (124) substantially reduces the inside diameter of circular columnar space (19) to the inside diameter of the opening of the gas exhaust hole (104).

24. With regards to claim 5, Hisanaga et al. teach a feed hole (122) for introducing the fluid compressed by the compressing mechanism into the separation chamber (19), where in the separation chamber has a gas exhaust hole (104) and the fluid introduced into the separation chamber (19) from the feed hole (104) is introduced into the separation chamber (19) in a direction substantially departing from the opening (104) of the discharge hole. The fluid is introduced in a direction that is 90° away from the exhaust hole (104) and which does not intersect with the axis of exhaust hole (104).

25. With regards to claim 6, Hisanaga et al. teach a discharge port (20) for discharging the compressed fluid from the compressing mechanism, a feed hole (122) for introducing the fluid discharged from the discharge port (20) into the separation chamber (19), and a guide passage (space defined by discharge port 20 when closed, front housing 2, and rear housing 4) for guiding the fluid from the discharge port into the feed hole, wherein the guide passage has a slender passage communicating with the

feed hole. The examiner considers the guide passage to be slender, as it is roughly analogous to slender passage 13A in the applicant's specification.

26. With regards to claim 7, in Fig. 20, Hisanaga et al. teach an oil-storage chamber (130) for storing the lubricating oil separated from the fluid in the separation chamber, and a communication passage (123) provided between the upper part of the oil-storage chamber (130) and the separation chamber (19), wherein the opening at the separation chamber side of the communication passage (123) has an opening in a direction so that the fluid flowing into the separation chamber (19) from the upper part of the oil-storage chamber (130) may not disturb revolution of the fluid in the separation chamber (19). Any fluid flowing from the oil-storage chamber (130) into the separation chamber (19) will do so perpendicular to the revolving flow, and will thus not have any velocity component facing into, or colliding with, the flow.

27. Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawata et al (US 2004/0170517).

28. With regards to claim 1, Kawata et al. teach a compressor (8) comprising a compressing mechanism (see Fig. 1) for compressing a fluid that contains lubricating oil (see paragraph 2), and a separation chamber (51) having introduced therein the fluid compressed by the compressing mechanism and in which at least part of the lubricating oil contained in the fluid is separated by the centrifugal force produced by this revolution (paragraph 30, apparent in "centrifugal oil separator"), wherein only the introduced fluid is present in the separation chamber.

29. With regards to claim 2, Kawata et al. teach a separation chamber (51) that has a columnar space (51) for revolving the introduced fluid, and a feed hole (53) for introducing the fluid compressed by the compressing mechanism into the separation chamber, and the ratio ( $L/R$ ) of shortest distance  $L$  from the central axis of the columnar space (51) to the projection line of the opening of the feed hole (53) projected parallel to the central axis of the feed hole (13) and the distance  $R$  from the central axis of the columnar space (51) to the inner peripheral wall (49) of the columnar space (51) is more than a specified value. For instance, in this case, the ratio has a value greater than zero, which could be such a specified value (see Fig. 3).

30. With regards to claim 3, in Fig. 15, Kawata et al. discloses a separation chamber whose feed hole has ratio ( $L/R$ ) greater than the value at which an intersection occurs between curves expressed as functions of the ratio in the cases of having and not having a separation pipe and the oil circulation rate.

31. With regards to claim 4, Kawata et al. teach a columnar space (11) for revolving the introduced fluid and a gas exhaust hole (bottom hole of 56) for exhausting the introduced fluid, and the opening at the separation chamber side of the gas exhaust hole (bottom hole of 56) is coupled to the outer circumference at one end of the columnar space through a reducing portion (56).

32. With regards to claim 5, Kawata et al. teach a feed hole (53) for introducing the fluid compressed by the compressing mechanism into the separation chamber (51), wherein the separation chamber (51) has an opening of gas exhaust hole (bottom hole of 56) for exhausting the introduced fluid, and the fluid introduced into the separation

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chamber (51) from the feed hole is introduced into the separation chamber in a direction departing from the opening of the discharge hole. See discussion of Hisanaga et al. above for interpretation of "departing."

33. With regards to claim 6, Kawata et al. teach a discharge port (10) for discharging the compressed fluid from the compressing mechanism, a feed hole (53) for introducing the fluid discharged from the discharge port into the separation chamber (51), and a guide passage (13-14) for guiding the fluid from the discharge port into the feed hole, wherein the guide passage (13-14) has a slender passage (13-14) formed by communicating with the feed hole (53).

34. With regards to claim 7, Kawata et al. teach a an oil-storage chamber (52) for storing the lubricating oil separated from the fluid in the separation chamber, and a communication passage (57) provided between the upper part of the oil-storage chamber and the separation chamber, wherein the opening at the separation chamber side of the communication passage (57) has an opening in a direction so that the fluid flowing into the separation chamber from the upper part of the oil-storage chamber may not disturb revolution of the fluid in the separation chamber (see Fig. 3 and paragraphs 41-42).

### ***Conclusion***

35. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Iwanami et al. (US 2004/0029727). Iwanami teaches a compressor, separation chamber, columnar space, exhaust hole and reducing portion.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip E. Stimpert whose telephone number is (571) 270-1890. The examiner can normally be reached on Mon-Fri 8:00AM-5:00PM, Alt. Fridays, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jackson can be reached on (571) 272-4697. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



PES (26 March 2007)



Tu Ba Hoang  
Primary Examiner